THAT WHICH IS CLAIMED IS:

1. A heterobifunctional polymer comprising:

a poly(alkylene oxide) backbone;

a first terminus comprising an acrylate group;

a second terminus comprising a target or a reactive moiety capable of coupling to a target; and

a hydrolytically degradable linkage for releasing said target upon hydrolysis.

2. A compound represented by the formula:

CH_2=CZ-CO_2-POLY-W-POLY'-Q

where

Z represents H or alkyl;

POLY and POLY' are poly(alkylene oxide) groups that can be the same or different and are represented by the formula -$(CH_2CHRO)_n$-CH_2CHR- in which R is H or alkyl, and n ranges from about 10 to about 4000;

Q represents a functional group; and

W represents a hydrolytically unstable linkage.

3. A compound represented by the formula:

CH_2=CZ-CO_2-POLY-W-Q

where

Z represents H or alkyl;

POLY is poly(alkylene oxide), represented by the formula -$(CH_2CHRO)_n$-CH_2CHR- in which R is H or alkyl, and n ranges from about 10 to about 4000;

Q represents a functional group; and

W represents a hydrolytically unstable linkage.

4. The compound of either of Claims 2 or 3, wherein POLY and POLY' are poly(ethylene glycol).

5. The compound of either of Claims 2 or 3, wherein W comprises a hydrolyzable covalent bond selected from the group consisting of esters, orthoesters, imines, acetals, peptide bonds, and disulfides.

6. The compound of either of Claims 2 or 3, wherein W has a structure of:

$$-O(CH_2)_m-CO_2R_1-CO_2-$$

where m ranges from 1 to 10, and R_1 is $-CH_2-$, $-CH_2CH_2-$ or $-CH(CH_3)CH_2-$, or W has the structure $-O-(CH_2)_m-CO_2-$.

7. The compound of either of Claims 2 or 3, wherein Q is selected from the group consisting of aldehydes, carboxylic acids, active esters, active carbonates, sulfonate esters, amines, hydrazides, orthopyridyl disulfides, and thiols.

8. A conjugate having a formula of:

$$(CH_2=CZ-CO_2-POLY-W-POLY'-L)_x-T$$

where

Z is H or an alkyl group;

POLY and POLY' are poly(alkylene oxides) comprising groups that can be the same or different and are represented by the formula $-(CH_2CHRO)_n-CH_2CHR-$ in which R is H or alkyl, and n ranges from about 10 to about 4000;

W represents a hydrolytically unstable linkage;

L is hydrolytically stable linkage;

x is an integer of 1-10; and

T is a target molecule.

9. The conjugate of Claim 7, wherein R is H.

10. The conjugate of Claim 7, wherein W has the structure of:

$$-O(CH_2)_m-CO_2R_1-CO_2-$$

where m ranges from 1 to 10, R_1 is selected from the group consisting of $-CH_2-$, $-CH_2CH_2-$, and $-CH(CH_3)CH_2-$ or W has the structure $-O-(CH_2)_m-CO_2-$.

11. The conjugate of Claim 7, wherein T is selected from the group consisting of proteins, polysaccharides, oligonucleotides, lipids, vitamins, hormones, or small molecule pharmaceuticals.

12. A compound having the following structure:

$$CH_2=CZCO_2\text{-}POLY\text{-}W\text{-}Q$$

where

Z represents H or alkyl;

POLY is a poly(alkylene oxide) represented by the formula $-(CH_2CHRO)_n-CH_2CHR-$ in which R is H or alkyl, and n ranges from about 10 to about 4000;

Q represents a functional group; and

W represents a hydrolytically unstable linkage.

13. The compound of Claim 11, wherein POLY is poly(ethylene glycol).

14. The compound of Claim 11, wherein W comprises a hydrolyzable covalent bond selected from the group consisting of esters, orthoesters, imines, acetals, peptide bonds, and disulfides.

15. The compound of Claim 11, wherein W has the structure of:

$$-O(CH_2)_m-CO_2R_1-CO_2-$$

where m ranges from 1 to 10 and R_1 is $-CH_2-$, $-CH_2CH_2-$, or $-CH(CH_3)CH_2-$ or W has the structure $-O-(CH_2)_m-CO_2-$.

16. The compound of Claim 11, wherein Q is selected from the group consisting of aldehydes, carboxylic acids, active esters, active carbonates, sulfonate esters, amines, hydrazides, orthopyridyl disulfides, N-succinimidyl, and thiols.

17. A conjugate having the following structure:

$$(CH_2=CZCO_2\text{-}POLY\text{-}W\text{-}L)_x\text{-}T$$

where

Z represents H or alkyl;

POLY is a poly(alkylene oxide) comprising a group represented by the formula $-(CH_2CHRO)_n-CH_2CHR-$ in which R is H or alkyl, and n ranges from about 10 to about 4000;

W represents a hydrolytically unstable linkage;

L is a hydrolytically stable linkage;

x is an integer from 1 to 10; and

T is a target molecule.

18. A polymer selected from the group consisting of compounds represented by the formula:

$$CH_2=CZ\text{-}CO_2\text{-}POLY\text{-}W\text{-}POLY'\text{-}Q_1,$$

$$(CH_2=CZ\text{-}CO_2\text{-}POLY\text{-}W\text{-}POLY'\text{-}L)_x\text{-}T,$$

$$CH_2=CZCO_2\text{-}POLY\text{-}W\text{-}Q, \text{ and}$$

$$(CH_2=CZCO_2\text{-}POLY\text{-}W\text{-}L)_x\text{-}T,$$

where

Z is H or an alkyl group;

POLY and POLY' are poly(alkylene oxides) that can be the same or different and are represented by the formula $-(CH_2CHRO)_n-CH_2CHR-$ in which R is H or alkyl, and n ranges from about 10 to about 4000;

W represents a hydrolytically unstable linkage;

Q represents a functional group;

L is hydrolytically stable linkage;

x is an integer of 1-10; and

T is a target molecule.

19. The polymer composition of Claim 17, wherein W has the structure of:

$$-O(CH_2)_m\text{-}CO_2R_1\text{-}CO_2-$$

where m ranges from 1 to 10, R_1 is selected from the group consisting of $-CH_2-$, $-CH_2CH_2-$, and $-CH(CH_3)CH_2-$ or W has the structure of $-O-(CH_2)_m-CO_2-$.

20. The polymer composition of Claim 17, wherein T is a protein.

21. The polymer composition of Claim 17, wherein R is H.

22. A hydrogel comprising a co-polymerization product of a multiacrylate and at least one compound selected from the group consisting of compounds represented by the formula:

$CH_2=CZ\text{-}CO_2\text{-}POLY\text{-}W\text{-}POLY'\text{-}Q_1$,

$(CH_2=CZ\text{-}CO_2\text{-}POLY\text{-}W\text{-}POLY'\text{-}L)_x\text{-}T$,

$CH_2=CZCO_2\text{-}POLY\text{-}W\text{-}Q$, and

$(CH_2=CZCO_2\text{-}POLY\text{-}W\text{-}L)_x\text{-}T$,

where

Z is H or an alkyl group;

POLY and POLY' are poly(alkylene oxides) that may be the same or different and are represented by the formula $-(CH_2CHRO)_n\text{-}CH_2CHR-$ in which R is H or alkyl, and n ranges from about 10 to about 4000;

W represents a hydrolytically unstable linkage;

Q represents a functional group;

L is hydrolytically stable linkage;

x is an integer of 1-10; and

T is a target molecule.

23. The hydrogel of Claim 21, wherein said multiacrylate is selected from the group consisting of PEG diacrylates and N-vinylpyrrolidone.

24. The hydrogel of Claim 22, wherein said PEG diacrylate is $CH_2=CHCO_2\text{-}PEG\text{-}O\text{-}CH_2CO_2CH(CH_3)CH_2CONH\text{-}PEGO_2CCH=CH_2$ or $CH_2=CHCO_2\text{-}PEG\text{-}O\text{-}CH_2CO_2PEG\text{-}O_2CCH=CH_2$.

25. The hydrogel of Claim 21, wherein T is a protein.

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